

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Baker et al.

Docket No:

39780-2830P1C8

Serial No:

10/006,041

Group Art Unit:

1647

Filed:

December 06, 2001

Examiner:

Rachel B. Kapust

For:

SECRETED AND TRANSMEMBRANE POLYPEPTIDES AND NUCLEIC

ACIDS ENCODING THE SAME

Commissioner for Patents Washington, D.C. 20231

DECLARATION OF AUDREY GODDARD, Ph.D. UNDER 37 CFR 1.131

I, Audrey Goddard, Ph.D. do hereby declare and say as follows:

- 1. I am Senior Clinical Scientist at the Diagnostics, Development Sciences Department of Genentech, Inc., South San Francisco, CA 94080.
- 2. I am one of the inventors of the above-identified application.
- 3. I have read and understood the claims pending in this application, and are aware that the claims have been rejected as anticipated by U.S. Patent Publication No. 2003/0096951 (Jacobs *et al.*, publication date May 22, 2003 and effective filing date August 14, 1998).
- 4. I, along with other inventors of this application, conceived and reduced to practice the polypeptide designated as PRO1244 (SEQ ID NO:130) claimed in the above-identified application in the United States prior to August 14, 1998.
- 5. At the time the PRO1244 polypeptide was cloned and sequenced I was responsible for overseeing the sequencing of novel polypeptides, including the PRO1244 polypeptide (SEQ ID NO:130) claimed in the above-identified application.
- 6. A cDNA clone, referred to as DNA64883-1526 in the above-identified application, was identified as encoding the PRO1244 polypeptide.
- 7. The full length of the cDNA clone is shown in Figure 73 of the above-identified application. The full-length cDNA sequence has 2213 nucleotide residues. The full length of the PRO1244 peptide encoded by DNA64883-1526 is shown in Figure 74 of

the above-identified application. The full-length PRO1244 polypeptide has 335 amino acid residues.

31

- 8. Copies of the pages from the GSeqEdit database which report the cloning and sequencing data for the PRO1244 polypeptide sequence and its encoding nucleic acid sequence are attached to this declaration (with the dates redacted) as Exhibit A.
- 9. The GSeqEdit report shows the full-length nucleic acid sequence for DNA-64883-1526 (identified as "DNA-64883") and the full-length PRO1244 polypeptide encoded by DNA 64883. Both the DNA-64883 and the PRO1244 polypeptide sequences were obtained prior to August 14, 1998.
- The DNA-64883 sequence shown in the GSeqEdit report is identical to that of SEQID NO: 129 disclosed in the above-identified application.
- 11. The beginning of the cDNA sequence corresponding to SEQ ID NO: 129 in the above-identified application is shown on page 1 of the GSeqEdit database report and the location of the first nucleotide is marked with "^insert starts here" and an arrow. The location of the last nucleotide corresponding to SEQ ID NO: 129 is shown on page 11 and is marked with an arrow.
- The amino acid sequence shown in the GSeqEdit report is identical to that of SEQ ID NO: 130 disclosed in the above-identified application.
- 13. The first 26 amino acid residues of the PRO1244 polypeptide (SEQ ID NO:130) encoded by the cDNA (DNA-64883) are also shown on page 1 of the GSeqEdit report and the remaining 309 residues appear on pages 2-6 of the report.
- 14. Exhibit A clearly shows that both the full-length DNA-64883 sequence and the full-length PRO1244 polypeptide sequence disclosed in the above-identified application were obtained prior to August 14, 1998.
- 15. I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information or belief are believed to be true, and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001

of Title 18 of the United States Code and that such willful statements may jeopardize the validity of the application or any patent issued thereon.

Audrey Goddard

Date

SV 2037583 v1 6/15/04 3:03 PM (39780.2830)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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Baker et al.

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- I, Audrey Goddard, Ph.D. do hereby declare and say as follows:
- 1. I am Senior Clinical Scientist at the Diagnostics, Development Sciences Department of Genentech, Inc., South San Francisco, CA 94080.
- 2. I am one of the inventors of the above-identified application.
- 3. I have read and understood the claims pending in this application, and are aware that the claims have been rejected as anticipated by U.S. Patent No. 6,525,174 (Young *et al.*, issue date February 25, 2003 and effective filing date June 4, 1998).
- 4. I, along with other inventors of this application, conceived and reduced to practice the polypeptide designated as PRO1244 (SEQ ID NO:130) claimed in the above-identified application in the United States prior to June 4, 1998.
- 5. At the time the PRO1244 polypeptide was cloned and sequenced I was responsible for overseeing the sequencing of novel polypeptides, including the PRO1244 polypeptide (SEQ ID NO:130) claimed in the above-identified application.
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- the above-identified application. The full-length PRO1244 polypeptide has 335 amino acid residues.
- 8. Copies of the pages from the GSeqEdit database which report the cloning and sequencing data for the PRO1244 polypeptide sequence and its encoding nucleic acid sequence are attached to this declaration (with the dates redacted) as Exhibit A.
- 9. The GSeqEdit report shows the full-length nucleic acid sequence for DNA-64883-1526 (identified as "DNA-64883") and the full-length PRO1244 polypeptide encoded by DNA 64883. Both the DNA-64883 and the PRO1244 polypeptide sequences were obtained prior to June 4, 1998.
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- 13. The first 26 amino acid residues of the PRO1244 polypeptide (SEQ ID NO:130) encoded by the cDNA (DNA-64883) are also shown on page 1 of the GSeqEdit report and the remaining 309 residues appear on pages 2-6 of the report.
- 14. Exhibit A clearly shows that both the full-length DNA-64883 sequence and the full-length PRO1244 polypeptide sequence disclosed in the above-identified application were obtained prior to June 4, 1998.
- 15. I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information or belief are believed to be true, and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001

of Title 18 of the United States Code and that such willful statements may jeopardize the validity of the application or any patent issued thereon.

Audrey Goddard

Date

SV 2042357 v1 6/18/04 1:29 PM (39780.2830)



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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Docket No:

39780-2830P1C8

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Rachel B. Kapust

For:

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ACIDS ENCODING THE SAME

Commissioner for Patents Washington, D.C. 20231

DECLARATION OF WILLIAM WOOD, Ph.D. UNDER 37 CFR 1.131

I, William Wood, Ph.D. do hereby declare and say as follows:

- I am Director and Staff Scientist at the Department of Bioinformatics, of Genentech, 1. Inc., South San Francisco, CA 94080.
- I am one of the inventors of the above-identified application. 2.
- 3. I have read and understood the claims pending in this application, and are aware that the claims have been rejected as anticipated by U.S. Patent No. 6,525,174 (Young et al., issue date February 25, 2003 and effective filing date June 4, 1998).
- I, along with other inventors of this application, conceived and reduced to practice the 4. polypeptide designated as PRO1244 (SEQ ID NO:130) claimed in the above-identified application in the United States prior to June 4, 1998.
- At the time the PRO1244 polypeptide was cloned and sequenced I was responsible for 5. overseeing the cloning of cDNAs which encoded novel polypeptides, including the cDNA that encoded PRO1244 polypeptide (SEQ ID NO:130) claimed in the aboveidentified application.
- A cDNA clone, referred to as DNA64883-1526 in the above-identified application, 6. was identified as encoding the PRO1244 polypeptide.
- The full length of the cDNA clone is shown in Figure 73 of the above-identified 7. application. The full-length cDNA sequence has 2213 nucleotide residues. The full length of the PRO1244 peptide encoded by DNA64883-1526 is shown in Figure 74 of

- the above-identified application. The full-length PRO1244 polypeptide has 335 amino acid residues.
- 8. Copies of the pages from the GSeqEdit database which report the cloning and sequencing data for the PRO1244 polypeptide sequence and its encoding nucleic acid sequence are attached to this declaration (with the dates redacted) as Exhibit A.
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of Title 18 of the United States Code and that such willful statements may jeopardize the validity of the application or any patent issued thereon.

William Wood

Date

SV 2042358 v1 6/18/04 1:30 PM (39780.2830)



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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Rachel B. Kapust

For:

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Commissioner for Patents Washington, D.C. 20231

DECLARATION OF WILLIAM WOOD, Ph.D. UNDER 37 CFR 1.131

I, William Wood, Ph.D. do hereby declare and say as follows:

- I am Director and Staff Scientist at the Department of Bioinformatics, of Genentech, 1. Inc., South San Francisco, CA 94080.
- I am one of the inventors of the above-identified application. 2.
- I have read and understood the claims pending in this application, and are aware that 3. the claims have been rejected as anticipated by U.S. Patent Publication No. 2003/0096951 (Jacobs et al., publication date May 22, 2003 and effective filing date August 14, 1998).
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(B) (C) (B)

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the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful statements may jeopardize the validity of the application or any patent issued thereon.

William Wood

Date

SV 2037583 v1 6/9/04 1:21 PM (39780.2830) Exhibit A to Declarations of Audrey Goddard and William Wood under 37 CFR 1.131

GSeqEdit Database Report

DNA64883 goddarda GSeqEdit DNA64883 zemin GSeqEdit DNA64883 wiw GSeqEdit >510 Sites [All Sites] >DNA64883 [Full]

>HBN64883.seq, sequenced at ABI/ACGT by Peter Ma and Ellson Chen >human ortholog of implantation-associated protein - Rattus DNA64883 sheldens GSeqEdit

maeII/hpyC hpy991 mnll 1 CGGAATICGG CICGAGGAGC GAACAIGGCA GCGCGTIGGC GGTTITGGIG IGTCICIGIG ACCAIGGIGG IGGCGCIGCI CATCGIIIGC GACGIICCCI GCCTTAAGCC GAGCTCCTCG CTTGTACCGT CGCGCAACCG CCAAAACCAC ACAGAGACAC TGGTACCACC ACCGCGACGA GTAGCAAACG CTGCAAGGGA taiI fnu4HI/bsoFI hhaI/cfoI tseI ppvI hinPI haeII btgI/bstDSI nlaIII mslI bstXI bsaJI dsaI styI ncol tsp45I bsmAI maeIII v s v tseI bstUI[M.hhaI-] fnuDII/mvnI hinPI acil bbvI bsh1236I nlaIII hhaI/cfoI fnu4HI/bsoFI MAARW thaI aval[M.taqI-] paeR7I mwoI tsp5091[M.ecoRI-] apol mwol bseRI mnlI taqI xhoI tliI smll ecoRI

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mnlI			aluI	
alwNI[dcm-].			IInad	
alw261/bsmAI	bsaXI	hpv1881	mspA11/nspB11	

bsmAI 101 CAGCCTCTGC CCAAAGAAAG AAGGAGATGG TGTTATCTGA AAAGGTTAGT CAGCTGATGG AATGGACTAA CAAAAGACCT GTAATAAGAA TGAATGGAGA GICGGAGACG GGTITCTITC TICCTCTACC ACAATAGACT TITCCAATCA GICGACTACC TIACCIGAIT GITITCIGGA CATTATICTT ACTIACCICI N G D × z OLME S K ι Ε H KEMV R K œ A S 27

I cac8I	cac81	hpvCH4V al	TGCAAGCAA	ACGTTCGTT	C, K Q
bst4CI/hpyCH4LII	hdI/eam1105I	tspRI	STGTCGT	GTTCAAGGCA GCGGAACACT TTCGGGGTGG CTCTTTAATG AGGCAATAGC AGTACAAGTG ACGAGGGTT GACGTAICTG TCACACAGCA AACGTTCGTT	PRNYSVIV MFT ALQ LHRQ CVV C.KQ
Д	ah	hpyCH4V tspRI	CTGCATAGA	GACGTATCT	L H R
н			TGCTCTCCAA	ACGAGAGGTT	A L Q
tspRI	btsI	nlaIII	TCATGTTCAC	AGTACAAGTG	M F
			TCCGTTATCG	AGGCAATAGC	S V I V
•		tsp509I	GAGAAATTAC	CTCTTTAATG	R N Y
			AAGCCCCACC	Trceceerec	A P
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                                                                                                                                                 hpyCH4V
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                                            mbol/ndell[dam-]
bssKI[dcm-]
               apyl[dcm+]
                                                          dpnII[dam-]
                                                                                                                                  alw261/bsmAI
                                                                         dpn1[dam+]
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                                                                                                      bstYI/xhoII
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ecoRII[dcm-]

dsaV[dcm-]

bstNI

scrFI[dcm-]

pspGI

mvaI

301 GCTGATGAAG AATTCCAGAT CCTGGCAAAC TCCTGGCGAT ACTCCAGTGC ATTCACCAAC AGGATATTTT TTGCCATGGT GGATTTTGAT GAAGGCTCTG CGACTACTIC TIAAGGICIA GGACCGIIIG AGGACCGCIA TGAGGICACG TAAGIGGIIG ICCIAIAAAA AACGGIACCA CCIAAAACIA CIICCGAGAC

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401 ATGTATITCA GAIGCTAAAC AIGAAITCAG CICCAACIII CAICAACIII CCIGCAAAAG GGAAACCCAA ACGGGGIGAI ACATAIGAGI TACAGGIGCG TACATAAAGT CTACGATITG TACTTAAGIC GAGGIIGAAA GIAGIIGAAA GGACGIIIIC CCIIIGGGII IGCCCCCACTA IGTATACICA AIGICCACGC 127

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bsmFI sau96I nlaIV

tsp509I

bssKI alwI[dam-]

mspAll/nspBII

501 GGGTTTTTCA GCTGAGCAGA TTGCCCGGTG GATCGCCGAC AGAACTGATG TCAATATTAG AGTGATTAGA CCCCCAAATT ATGCTGGTCC CCTTATGTTG CCCAAAAAGT CGACTCGTCT AACGGGCCAC CTAGCGGCTG TCTTGACTAC AGTTATAATC TCACTAATCT GGGGGTTTAA TACGACCAGG GGAATACAAC Σ avalI bslI ы aluI G ø > Н Ľ٠ œ taqI Œ 160

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CCTAACGAAA ACCGACAATA ACCACCTGAA CACATAGAAG CTTCTTCATT ATACCTTAAA GAGAAATTAT TTTGACCTAC CCGAAAAGT CGAAACACAA 601 GGATTGCTIT TGGCTGTTAT TGGTGGACTT GTGTATCTTC GAAGAAGTAA TATGGAATTT CTCTTTAATA AAACTGGATG GGCTTTTGCA GCTTTGTGTT ტ ט 193

nlaIII				sq/;	11	557	CC	
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	sfaNI	fokI	bstF5I	GGATGCTCTC	CCTACGAGAG
		eco571 fokI	Ilodm	TICTICAGIL	AAGAAGTCAA
	,			TGTTGTATTA	ACAACATAAT
				GTATTGGACT	CATAACCTGA
				TGTGTGGCTG	ACACACCGAC
				AAAGATAATG	TTTCTATTAC
				TTGGAAAGCG	AACCTTTCGC
			nlaIII	901 GACATGGATA TIGGAAAGCG AAAGATAATG TGTGTGGCTG GTATTGGACT TGTTGTATTA TICTTCAGTT GGATGCTCTC TATTTTAGA TCTAAATATC	CTGTACCTAT AACCTTTCGC TTTCTATTAC ACACACGGAC CATAACCTGA ACAACATAAT AAGAAGTCAA CCTACGAGAG ATAAAATCT AGATTTATAG
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293 D

GSeqEdit, DNA64883 [Full], page 5

bsmFI

bsrI sau96I nlaIV

bpmI/gsuI[dcm-] rsal avall

csp6I bsrI **DPuMI** tru9I

tsp509I

scal

tspRI

eco01091/draII

mseI

aluI hpy188I

1001 ATGCTACCC ATACAGCTTT CTGATGAGTT AAAAAGGTCC CAGAGATATA TAGACACTGG AGTACTGGAA ATTGAAAAAC GAAAATCGTG TGTGTTTGAA TACCGAIGGG TAIGICGAAA GACTACTCAA TITITCCAGG GICTCTATAI AICIGIGACC ICAIGACCII IAACIIIIIG CITITAGCAC ACACAACII တ Σ H တ ပ 327

tru9I

tru9I mseI

tru9I mseI Ilodm tru9I mseI msel ahalil/dral SWal mnll mboll hpyCH4V

1101 AAGAAGAATG CAACTTGTAT ATTTTGTATT ACCTCTTTTT TTCAAGTGAT TTAAATAGTT AATCATTTAA CCAAAGAAGA TGTGTAGTGC CTTAACAAGC TICTICITAC GIIGAACAIA TAAAACAIAA IGGAGAAAAA AAGIICACIA AATITAICAA ITAGIAAAIT GGIIICIICI ACACAICACG GAAIIGIICG

mnlI

tru9I rsal tsp5091 csp6I mseI tsp509I tru9I mseI mbolI tspRI earI/ksp632I mnll tru9I mseI tsp509I hpy1881 **DSpCNI** ddeI

1201 AATCCTCTGT CAAAATCTGA GGTATTTGAA AATAATTATC CTCTTAACCT TCTCTTCCCA GTGAACTTTA TGGAACATTT AATTTAGTAC AATTAAGTAT TTAGGAGACA GTTTTAGACT CCATAAACTT TTATTAATAG GAGAATTGGA AGAGAAGGGT CACTTGAAAT ACCTTGTAAA TTAAATCATG TTAATTCATA

mnlI

tru91

mseI

hpaI

1301 AITATAAAAA TIGTAAAACT ACTACTIIGI TITAGITAGA ACAAAGCTCA AAACTACTIT AGTTAACTIG GICATCTGAI ITTATATIGC CTTATCCAAA TAATATITIT AACATTITGA TGATGAAACA AAATCAATCT TGTTTCGAGT TTTGATGAAA TCAATTGAAC CAGTAGACTA AAATATAACG GAATAGGTTT bslI hincII/hindII hpy188I aluI

tsp509I

psil

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pspGI

mvaI

ecoRII[dcm-]

dsaV[dcm-]

bstNI

bssKI[dcm-]

apyI[dcm+]

XmnI

ecoRI

tsp5091[M.ecoRI-]

IJoqu

aluI

ddeI[M.aluI-]

1401 GAIGGGGAAA GIAAGICCIG ACCAGGIGIT CCCACATAIG CCIGITACAG ATAACTACAI TAGGAAITCA IICITAGCII CITCAICIII GIGIGGAIGI

bstF5I

fokī

mslI asp700 apol maeIII ndeI sexAI hpy188III

CTACCCCTTT CATTCAGGAC TGGTCCACAA GGGTGTATAC GGACAATGTC TATTGATGTA ATCCTTAAGT AAGAATCGAA GAAGTAGAAA CACACCTACA

taiI

hgiAI/aspHI

bsp1286

rmal **DSIHKAI**

hpy1881

mboII bpuAI

hpy188I maeII/hpyCH4IV

aflii mael bspC eco57I

mboli bmyl btri bfal mnli

CATAIGAAAI GCGIAGAAAG GAAAACICAI CICIITAAIA CACACAGIAC ACCAGAAGAC IIITACCIIG IGGIAAGAAG ICICGIGIGC AGAICGGGAG 1501 GIATACITIA CGCATCTITC CITITGAGIA GAGAAATIAT GIGIGICAIG IGGICTICIG AAAAIGGAAC ACCATICIIC AGAGCACACG ICIAGCCCIC

nlaIII bbsI

tsp509I

bst1107I bst217I

accI

tth11111/aspI

pleI

pflFI

mlyI

bpmI/gsuI[dcm-]

hinPI

bseRI mnll bseRI

hinfI

bsmAI

1601 AGCAAGACAG TIGITICICC ICCICCTIGC ATAITICCIA CIGCGCICCA GCCIGAGIGA TAGAGIGAGA CICIGICICA AAAAAAGIA ICICIAAAIA TCGTTCTGTC AACAAAGAGG AGGAGGAACG TATAAAGGAT GACGCGAGGT CGGACTCACT ATCTCACTCT GAGACAGAGT TTTTTTCAT AGAGATTTAT bsmAI hhal/cfol bspCNI bst4CI/hpyCH4III mnll hpyCH4V

tru9I

mseI

tfiI

tru91 maeIII

msel bstEII

ddeI

tsp45I

Ihqh

Smll tsp509I

hpaI

hinfI XmnI

hincII/hindII

hpy188I

asp700

1701 CAGGATTATA ATTTCÍGCTT GAGTATGGIG TTAACTACCT TGTATTTAGA AAGATTTCAG ATTCATTCCA TCTCCTTAGT TTTCTTTAA GGTGACCCAT

GTCCTAATAT TAAAGACGAA CTCATACCAC AATTGATGGA ACATAAATCT TTCTAAAGTC TAAGTAAGGT AGAGGAATCA AAAGAAAATT CCACTGGGTA

tsp45I

haeIII/palI

maeIII

ddeI[M.aluI-]

nlaIII

tspRI

dde

maeIII tsp5091

csp6I rsaI

GACACTATIT TIATATCGAA TCACGATTTT AGTCACATTG AATATGTACC GGATTTTACA AAGATGTTTA ATCTCAAACA GTGAATAAGG TAAACATGGA 1801 CIGIGATAAA AATATAGCTT AGIGCTAAAA TCAGIGIAAC TTATACAIGG CCTAAAAIGI TICTACAAAI TAGAGITIGI CACTTAIICC AITIGIACCI

```
styl cac8I
                                                                                                                                                                                       tsp45I
                                                                                                                                                                                                     maeIII
                                                                                                                                                                                                                                              pleI bslI[dcm-] hhaI/cfoI
                                                                                                                                                                                                                                bssKI[dcm-] tspRI
                                                                                                  mscI/ball[dcm-]
                                           ecoRII[dcm-]
scrFI[dcm-]
                                                                                                                                                                        mval bssKI[dcm-]
                                                                                                                                                                                                                  hinPI
                                                        dsaV[dcm-]
                                                                                    haeIII/palI
                                                                                                                                                                                      ecoRII[dcm-]
                                                                                                                eaeI[dcm-]
                                                                      bstNI
                                                                                                                                            scrFI[dcm-]
              pspGI
                                                                                                                                                                                                    dsaV[dcm-]
                             mvaI
                                                                                                                             cfri
                                                                                                                                                                                                                  bstNI
                                                                                                                                                          pspGI
```

hpy18 bssS

sau3AI

dpnII[d dpnI [da

haelli/pall

mnll bsaJI

bspCNI ddeI

TICICITITI AICCGAGICA AICITITCCI GAGGGACCGG ICCGCGICAC IGAAIGCGGA CAITAGAGIC GIGAAACCCI CCGGIICCGI CCGICIAGIG

1901 AAGAGAAAAA TAGGCTCAGT TAGAAAAGGA CTCCCTGGCC AGGCGCAGTG ACTTACGCCT GTAATCTCAG CACTTTGGGA GGCCAAGGCA GGCAGATCAC

hinfI apyI[dcm+] btsI

pspCNI ddeI

mlyI bsaJI apyI[dcm+]

mboI/nd

2001 GAGGICAGGA GIICGAGACC AICCIGGCCA ACAIGGIGAA ACCCCGICIC TACIAAAAAI AIAAAAAIIA GCIGGGIGIG GIGGCAGGAG CCIGIAAICC CICCAGICCI CAAGCICIGG IAGGACCGGI IGIACCACII IGGGGCAGAG AIGAITITIA IAITITIAAI CGACCCACAC CACCGICCIC GGACAITAGG tsp509I bsmAI esp3I bsmBI hpy188III apy1[dcm+] hphI nlaIII hpy188III bsaI bstF5I haeIII/palI bssKI[dcm-] taqI fokI cfrI

mscI/ball[dcm-]

eael[dcm-]

scrFI[dcm-]

pspGI

ecoRII[dcm-]

dsaV[dcm-]

bstNI

scrFI[dcm-]

pspGI

ecoRII[dcm-] bssKI [dcmapyI[dcm+] dsaV[dcmdpnI[dam+] bsgI bpmI/gsuI[dcm-] bstNI dpnII[dam-] hpyCH4V mboI/ndeII[dam-] tspRI btsI sau3AI tspRI mnlI hpy188III **bspCNI** ddeI hinfI tfiI mnli mnli bssSI **DSPCNI** ddeI

2101 CAGCTACACA GGAGGCTGAG GCACGAGAAT CACTTGAACT CAGGAGATGG AGGTTTCAGT GAGCCGAGAT CACGCCACTG CACTCCAGCC TGGCAACAGA GTCGATGIGI CCICCGACIC CGIGCICIIA GIGAACIIGA GICCICIACC ICCAAAGICA CICGGCICIA GIGCGGIGAC GIGAGGICGG ACCGIIGICI

fnu4HI/bsoFI

haeIII/palI

mcrI

eagI/xmaIII/eclXI

eaeI

cfrI

DSIEI

rmaI

mael notI

fnu4HI/bsoFI bfaI

hinfi

bsmAI

mlyI pleI

acil acil

2201 GCGAGACTCC ATCTCAAAAA AAAAAAAA AAAAAAAA AAAAAAAGG CGGCCGCCGA CTAGTGAGC CGCTCTGAGG TAGAGTTTTT TTTTTTTT TTTTTTTT TTTTTTCCC GCCGGCGGCT GATCACTCG

> length: 2269

accI (GTMKAC):

acil(CCGC):

780 1586

278 714 1150

afliii (ACRYGT):

ahalii (TTTAAA)

ahdI (GACNNNNNGTC):

alw26I (CAGNNNCTG): aluI (AGCT):

alwI (GGATCNNNN):

alwni (Cagnnncig):

apol (RAATTY):

asp700 (GAANNNTTC):

apyI (CCWGG):

asphi (GWGCWC):

1464 1749

1582

101 316